REMARKS

In accordance with the foregoing, claims 11-14, 19, and 22 have been amended, and claims 23-30 have been added without adding any new matter. Claims 11-30 are pending and under consideration.

OBJECTION TO THE SPECIFICATION

Item 3 on page 2 of the Office Action objected to the specification and required that applicant "furnish drawings to facilitate understanding of the invention." However, as evidenced by the postcard receipt (a copy of which is attached), on August 17, 2006 a copy of the international application PCT/EP2005/050516 as published (WO 2005/078423 A1), including five (5) sheets of drawings, was filed upon entering the U.S. national stage. To expedite prosecution, submitted herewith is another copy of the drawings as published in WO 2005/078423 A1. Therefore, withdrawal of the objection to the specification is respectfully requested.

OBJECTION TO CLAIMS

Item 4 on page 3 of the Office Action objected to the claims due to improper dependency. The typographical error has been corrected. Therefore, withdrawal of the objection to the claims is respectfully requested.

CLAIM REJECTIONS UNDER 35 U.S.C. § 102

Item 6 on pages 3-4 of the Office Action rejected claims 11 and 12 under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent No. 3,231,815 to Spencer.

Independent claim 11 patentably distinguishes over Spencer at least by reciting "collecting particles by a sensor in the gas stream." The Office Action alleges that the above-identified feature of claim 11 is rendered obvious by FIG. 2 of Spencer. However, FIG. 2 merely illustrates an exploded view of a sensing element used in a fluid contamination measuring system illustrated in FIG. 1 of Spencer. Neither FIG. 1, nor FIG. 2, nor the rest of Spencer teaches or suggests that the sensor in Spencer collects particles or that the sensor is placed in a gas stream.

Further, nothing has been cited or found in Spencer that teaches or suggests "determining a reference value of a characteristic variable of the resonant circuit which can vary as a result of particle load of the sensor" and "determining a change in the characteristic variable brought about by the particle load compared to the reference value." In Spencer, impurities in the fluid passing between the sensor and pipe walls, cause rapid and temporary fluctuation of

voltage. The number of impurities in the fluid is counted by counting the number of such fluctuations (see col. 5, lines 13-23, in Spencer). The method described in Spencer does not determine "a change in the characteristic variable brought about by the particle load compared to the reference value" as recited in claim 11, but merely counts the number of fluctuations of the voltage occurring when passing impurities affect the dielectric value, and, therefore, the capacitance between the sensor and pipe's walls (see col. 3 lines 18-21 in Spencer). No suggestion of comparing anything with a reference value has been found in Spencer.

At least for these reasons, claim 11 and claims 12-15 depending from claim 11 patentably distinguish over the cited prior art.

CLAIM REJECTIONS UNDER 35 U.S.C. § 103

Item 8 on pages 5-6 of the Office Action rejected claims 13-15 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Spencer in view of U.S. Patent Application Publication No. 2008/0190173 to Wienand et al. (hereinafter, "Wienand").

Applicants respectfully submit that Wienand which has a 371 date of December 5, 2007 is not a prior art reference to the current application which has a U.S. filing date of May 15, 2007 and an international filing date of February 7, 2005, well before the April 20, 2006 international filing date of Wienand.

Item 9 on pages 6-7 of the Office Action rejected claims 16-19 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Spencer in view of U.S. Patent No. 6,465,749 by Kurz.

As discussed above relative to claim 11, contrary to the Office Action's assertion, Spencer does not anticipate or render obvious "a sensor in the gas stream [...] collecting particles" as recited in claim 16.

Furthermore, Spencer does not anticipate or render obvious

> a characteristic variable determiner determining change in a characteristic variable of the electromagnetic resonant circuit, the characteristic variable varying as a result of particle load of said sensor, from a reference value determined when said sensor is not loaded due to having been heated above an ignition temperature of the particles

(emphasis added). In Spencer, the particles are not collected to form a load, and the characteristic variable varies due to particles in a fluid passing in-between electrodes of a capacitor formed with the sensor. Further, nothing has been cited or found in Spencer that teaches or suggests a reference value of the characteristic variable being determined when the sensor is not loaded due to having been heated above an ignition temperature of the particles.

While referring to similar features recited in claim 13, the Office Action admitted that Spencer is silent relative to heating the sensor, but relies on Wienand to anticipate or render obvious a similar feature (see page 5, lines 5-11, of the Office Action). However, as noted above, Wienand is not a prior art reference.

Further, the Office Action relied on Kurz to render obvious the sensor having "a nonconductive base body made of porous material and two electrodes spaced apart from one another" as recited in claim 16.

Kurz describes a magnetostrictive mass sensing apparatus having a filter (170 in FIG.2, 171 in FIG. 3 or 172 in FIG. 4 of Kurz) to collect particles. The filter is located at one end of a cylindrical tube manufactured from a magnetostrictive material (122 in FIGS. 2-4 of Kurz). The frequency of oscillation of the magnetostrictive tube, which varies directly in proportion to the mass of collected particles, is monitored by pick-up coils (see Kurz Abstract).

The Office Action alleged that the filter 170 in FIG. 2 of Kurz corresponds to the nonconductive base body, and elements 166/168 of in FIG. 1 of Kurz correspond to the two electrodes recited in claim 16. However, Applicants respectfully submit that Kurz does not render obvious the sensor recited in claim 16 because:

1. the indicated elements (170, 166, and 168 in FIGS. 1-2 of Kurz) are not part of a sensor, "integrated as a capacitive element into the resonant circuit," and

2. elements 166 and 168 in FIG. 1 are mere lines connecting the electronic circuit 160 to drive coil 140 and sense coil 150, respectively (see FIG. 1 and col. 7, lines 4-13 of Kurz) and do not represent electrodes.

In view of the above, the cited prior art references fail to render obvious all the features recited in independent claim 16. Therefore, independent claim 16 and claims 17-22 depending from claim 16 are patentable.

Item 10 on page 8 of the Office Action rejected claims 20-22 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Spencer, in view of Kurz and Wienand.

Claims 20-22 patentably distinguish over the prior art at least by inheriting patentable features from independent claim 16. Additionally, as pointed out before, Wienand is not a prior art reference.

NEW CLAIMS

New claims 23-29 depending from claims 11 and 16 recite features similar to original claims. No new matter is added. In addition to the distinctions discussed above with respect to claims 11 and 16, new claims 23 and 24 further patentably distinguish over the prior art at least because Kurz does not disclose electrodes.. New claims 25-29 further patentably distinguish over the prior art at least because Wienand, which allegedly renders obvious heating the sensor, the catalytically active layer and the soot particles, is not a prior art reference.

New claim 30 is directed to an apparatus for monitoring soot particle concentration in a gas stream. The claim is supported by the originally filed specification. No new matter is added. Claim 23 patentably distinguishes over the prior art by reciting:

> a sensor in the gas stream, integrated as a capacitive element into the electromagnetic resonant circuit, collecting soot particles between electrodes of the capacitive element; and
>
> a particle concentration estimator estimating soot particle concentration in gas stream based on a change in resonance frequency of electromagnetic resonant circuit due to the collected sooth particles in the sensor.

CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date: Feb. 6, 2009

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